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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,367	10/28/2003	Oswin Ottinger	SGL 02/24	5955
24131	7590	08/09/2006	EXAMINER	
LERNER GREENBERG STEMER LLP P O BOX 2480 HOLLYWOOD, FL 33022-2480			VIJAYAKUMAR, KALLAMBELLA M	
			ART UNIT	PAPER NUMBER
			1751	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,367

Applicant(s)

OTTINGER ET AL.

Examiner

Kallambella Vijayakumar

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim 1 was amended. Claims 1-13 are currently pending with the application.

Applicant's arguments filed 05/24/2006 with respect to claims 1-13 have been fully considered, found to be persuasive, but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

(a). The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Any negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims. See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977). The mere absence of a positive recitation is not basis for an exclusion. The disclosure by the applicants teaches mixing the expanded graphite with a PCM (Specification, Pg-11, Ln 18-22), but does not disclose that the shape stabilizers are detrimental to the invention and/or excluded from the composition.

(b). The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1751

The claim recites the limitation of "the material mixture has no additional shape-stabilizing agent" and neither the disclosure nor the claims recite what materials are encompassed by this limitation, and one of ordinary skilled will not be appeased about the boundaries of this limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4 and 6-13 rejected under 35 U.S.C. 102(b) as being anticipated by Bonin (US 5,094,780).

Bonin teaches a mold and a molding composition comprising a mixture of : (i). Particles of expanded graphite/s, (ii). A binder/mixture of binders such as hydrates of inorganic salts, molasses, sugar syrups, fructose, and (iii). Fillers such as metal hydroxides, that meet the limitation of composition in claim-1 (Abstract, Col-1, Ln 40-Col-2, Ln 64). The prior art teaches adding 0 to 80 wt% of binders and 0-500 wt% fillers to the expanded graphite, and by virtue of low density of expanded graphite, the component ratios inherently meet the ratio limitations in claim-2. Acetates of alkali metals meet the limitation of nucleating agent in claim-3 and the ratio range of 0-80% meets the limitation of claim-4 whose limitation includes a range of $0 < x \leq 2$ volume%. With regard to claim-6, the prior art teaches an expanded graphite with a density of less than 0.5 g/cc or 50 g/l (C-3, Ln 46-48). The salts of inorganic hydrates meet the limitation of claim-7.

Art Unit: 1751

With regard to method claims 8-13, the prior art teaches mixing the expanded graphite with hydrates of inorganic salts (powders/solutions) and liquids such as sugar syrups, and molding the mixture under heat and pressure forming a body that is thermally conductive (C-3, Ln 24). The instant claimed anisotropic thermal conductivity in the molded body will be inherent in the prior art composition, because, the prior art composition is identical to that by the applicants and produced by an identical method, and identical compositions have identical properties and characteristics. The examiner asserts that the prior art composition will be identical to that produced by the specific molding techniques of the applicant's claims 12 and 13. All the limitations of the instant claims are met.

The reference is anticipatory.

2. Claims 1, 3 and 7-13 are rejected under 35 U.S.C. 102(a) as being anticipated by Neuschutz et al (WO 2003/046982).

The US 2005/0007740 by Neuschutz et al is being used as the English translation of the WO document in the current rejection.

Neuschutz et al teach an intimate mixture comprising finely divided expanded graphite and the auxiliary material such as salts and sugar alcohol. The prior art further teaches adding nucleating agents to the composition and forming the chiller by pressing the mixture or by pelleting or by extrusion (Para 0034, 0037, 0039, 0041-0043). The instant claimed anisotropic thermal conductivity in the molded body will be inherent in the prior art composition, because, the prior art composition is identical to that by the applicants and produced by an identical method and identical compositions have identical properties and characteristics. All the limitations of the instant claims are met.

The reference is anticipatory.

Art Unit: 1751

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bonin (US 5,094,780).

The disclosure on the composition of the mixture by Bonin et al as set forth in rejection-1 under 35 USC 102(b) is herein incorporated.

The prior art is silent about the particle size of the expanded graphite in the composition.

The claimed particle size would be obvious over the technical data for the expanded graphite available from Timcal, that shows a Scott density of 0.03 g/cc and a particle size with a d50 of 36.1

Art Unit: 1751

microns, and it would have been obvious to a person of ordinary skilled in the art to use such commonly available materials in the art composition with reasonable expectation of success.

2. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gally et al (US 2002/0016505) in view of Neuschutz et al (WO 2003/046982).

Gally et al teach a latent heat storage system comprising a mixture of didodecylammonium chloride and 10% graphite powder, and forming the body by mixing the components and press molding the mixture (Pg-4, EXample-2).

The prior art fails to teach a composition containing expanded graphite or the properties of expanded graphite or the addition of nucleating agent.

The US 2005/0007740 by Neuschutz et al is being used as the English translation of the WO document in the current rejection. In the analogous art, Neuschutz et al teach an intimate mixture comprising finely divided expanded graphite and the auxiliary material such as salts and sugar alcohol. The prior art further teaches adding nucleating agents to the composition and forming the chiller by pressing the mixture or by pelleting or by extrusion (Para 0034, 0037, 0039, 0041-0043).

It would have been obvious to a person of ordinary skilled in the art to combine the prior art teachings to substitute the graphite in the composition of Gally with expanded graphite of Nueschuetz et al as functional equivalents, and further include nucleating agents in the composition to stabilize the mixture with reasonable expectation of success, because the combined prior art teaching is suggestive of the claimed composition.

With regard to claim-4, the prior art teaches the addition of nucleating agent that would overlap over the instant claimed range of at most 2% by volume that includes a range of $0 < x \leq 2$ volume%.

With regard to claims 5-6, the claimed particle size and density would be obvious over the technical data for the expanded graphite available from Timcal, that shows a Scott density of 0.03 g/cc and a particle size with a d50 of 36.1 microns (See Bonin (US 5,094,780) in rejection-1 under 102(b)), and it would have been obvious to a person of ordinary skilled in the art to use such commonly available

Art Unit: 1751

materials in the art composition and optimize its properties as choice of design of the preparation process with reasonable expectation of success.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 571-272-1324. The examiner can normally be reached on 8.30-6.00 Mon-Thu, 8.30-5.00 Alt Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on 571-272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1751

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KMV
July 26, 2006.


DOUGLAS MCGINTY
SUPERVISORY PATENT EXAMINER

1751